

AUTONOMOUS POWER SOURCEABSTRACT OF THE DISCLOSURE

An autonomous power source comprises a power harvester mounted on a movable structure. The power harvester includes a coil, a magnet, and a low-friction ferrofluidic bearing in contact with the magnet, arranged such that the magnet and coil move with respect to each other when the structure is in motion such that an electrical current is produced in the coil. This current is converted to power and stored in an energy storage system and is thus available to power electronic circuitry. The magnet and bearing are preferably enclosed within a closed linear or circular tube, with the coil mounted around the exterior of the tube. The power harvester and battery are combined with one or more sensors and a wireless transmitter to form a tire pressure monitoring system.